

# Terraform Task

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**Batch : Batch 11**

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**Task : Azure CLI**

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## Azure CLI

The Azure Command-Line Interface (CLI) is Microsoft's cross-platform command-line tool for managing Azure resources. It allows you to create, manage, and monitor Azure resources from the command line or in scripts.

- Its helps to interact with Azure services to manage resources

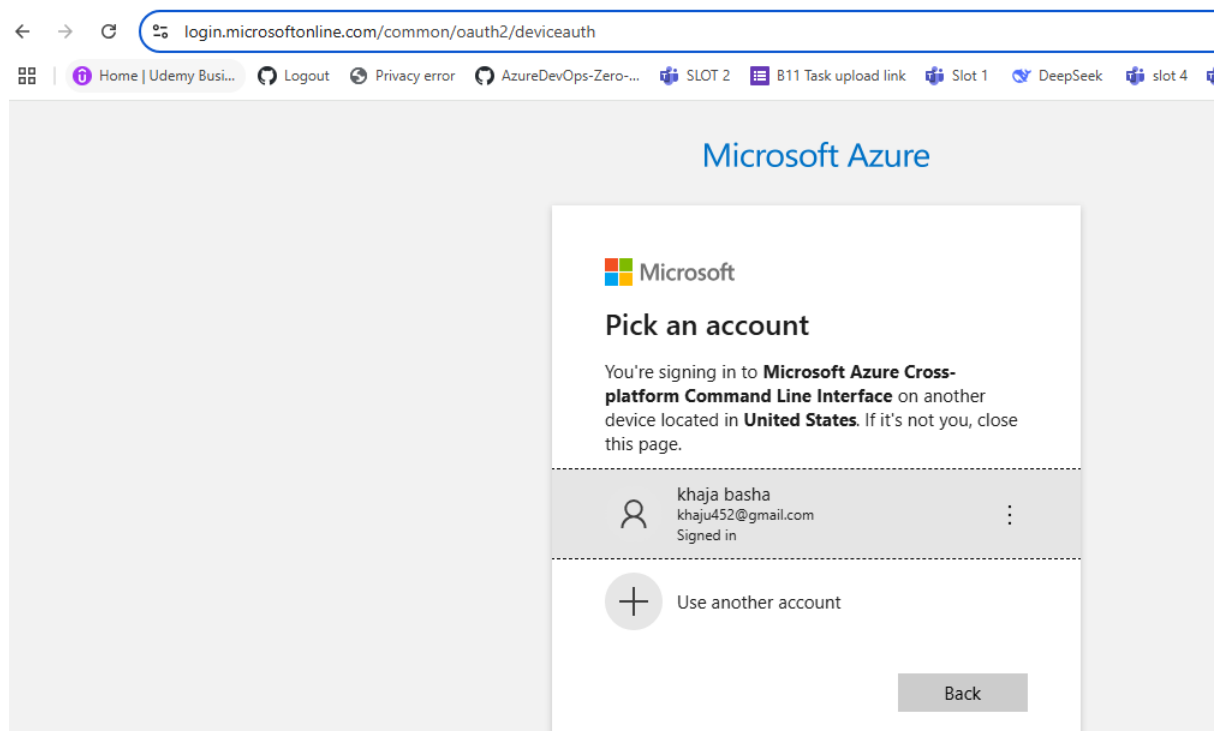
### Basic Commands

Login

az login

```
Your CLI is up-to-date.
azureuser@terra-sk:~$ az login
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code EJPJPN8LP to authenticate.
```

- When we write az login it will create a link with code
- Copy the code and click the URL it will open a window and login with credentials



As soon as login it will give me the tenants which will be there

```
your CLI is up-to-date.
azureuser@terra-sk:~$ az login
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code EJPJPN8LP to authenticate.

Retrieving tenants and subscriptions for the selection...

[Tenant and subscription selection]

No      Subscription name      Subscription ID      Tenant
-----
[1]      Azure subscription 1      6b09f008-6934-4533-97f5-79266f544b0b      Default Directory
[2] *    Azure subscription 1      5d1b700e-5c37-4a48-a430-e148b56e5404      Default Directory

The default is marked with an *; the default tenant is 'Default Directory' and subscription is 'Azure subscription 1' (5d1b700e-5c37-4a48-a430-e148b56e5404).

Select a subscription and tenant (Type a number or Enter for no changes):

Tenant: Default Directory
Subscription: Azure subscription 1 (5d1b700e-5c37-4a48-a430-e148b56e5404)

[Announcements]
With the new Azure CLI login experience, you can select the subscription you want to use more easily. Learn more about it and its configuration at https://go.microsoft.com/fwlink/?linkid=227236

If you encounter any problem, please open an issue at https://aka.ms/azclibug

[Warning] The login output has been updated. Please be aware that it no longer displays the full list of available subscriptions by default.

azureuser@terra-sk:~$
```

List subscriptions

az account list

which will show what are the account subscription

```
azureuser@terra-sk:~$ az account list
A few accounts are skipped as they don't have 'Enabled' state. Use '--all' to display them.
[
  {
    "cloudName": "AzureCloud",
    "homeTenantId": "66573a45-6f85-4878-bebc-e0bc24647836",
    "id": "5d1b700e-5c37-4a48-a430-e148b56e5404",
    "isDefault": true,
    "managedByTenants": [],
    "name": "Azure subscription 1",
    "state": "Enabled",
    "tenantDefaultDomain": "abctest7522gmail.onmicrosoft.com",
    "tenantDisplayName": "Default Directory",
    "tenantId": "66573a45-6f85-4878-bebc-e0bc24647836",
    "user": {
      "name": "khaju452@gmail.com",
      "type": "user"
    }
  }
]
azureuser@terra-sk:~$
```

Set default subscription

az account set --subscription "My Subscription Name"

List resource groups

az group list

```
Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help
azureuser@terra-sk:~$ az group list
[
  {
    "id": "/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/skvm-terra",
    "location": "westus",
    "managedBy": null,
    "name": "skvm-terra",
    "properties": {
      "provisioningState": "Succeeded"
    },
    "tags": null,
    "type": "Microsoft.Resources/resourceGroups"
  },
  {
    "id": "/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/muzz",
    "location": "eastus",
    "managedBy": null,
    "name": "muzz",
    "properties": {
      "provisioningState": "Succeeded"
    },
    "tags": {},
    "type": "Microsoft.Resources/resourceGroups"
  },
  {
    "id": "/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/NetworkWatcherRG",
    "location": "eastus",
    "managedBy": null,
    "name": "NetworkWatcherRG",
    "properties": {
      "provisioningState": "Succeeded"
    },
    "tags": {},
    "type": "Microsoft.Resources/resourceGroups"
  }
]
```

Which will give me as a JSON format if I want to see as table then

Az group list -o table

```
}
]
azureuser@terra-sk:~$ az group list -o table
Name                Location    Status
-----
skvm-terra          westus     Succeeded
muzz                eastus     Succeeded
NetworkWatcherRG    eastus     Succeeded
azureuser@terra-sk:~$
```

Which is easy for understanding

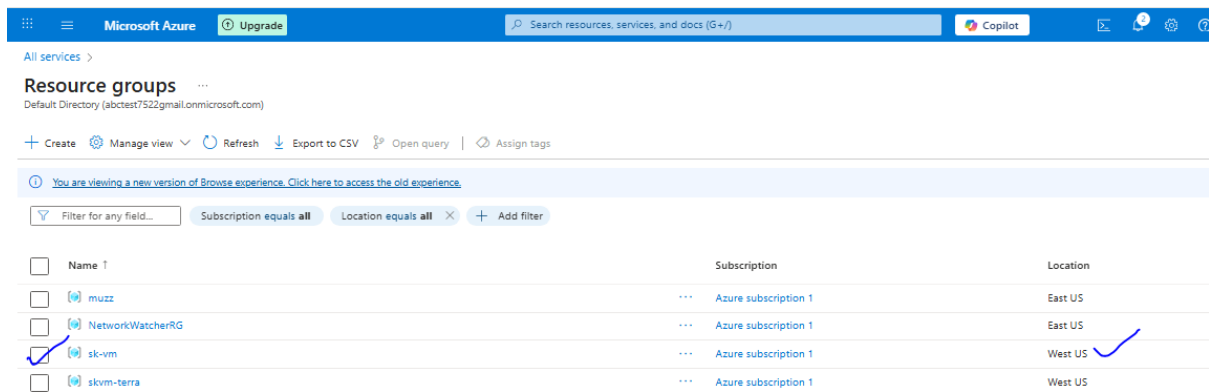
### Create a resource group

az group create --name MyResourceGroup --location eastus

az group create -n sk-vm -l westus

```
NetworkWatcherRG eastus Succeeded
azureuser@terra-sk:~$ az group create -n sk-vm -l westus
{
  "id": "/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/sk-vm",
  "location": "westus",
  "managedBy": null,
  "name": "sk-vm",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
azureuser@terra-sk:~$
```

We can check whether its created or not though GUI



Microsoft Azure Upgrade Search resources, services, and docs (G+I) Copilot

All services >

### Resource groups

Default Directory (abctest7522@gmail.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags

You are viewing a new version of Browse experience. Click here to access the old experience.

Filter for any field... Subscription equals all Location equals all Add filter

<input type="checkbox"/>	Name ↑	Subscription	Location
<input type="checkbox"/>	muzz	Azure subscription 1	East US
<input type="checkbox"/>	NetworkWatcherRG	Azure subscription 1	East US
<input checked="" type="checkbox"/>	skvm	Azure subscription 1	West US
<input type="checkbox"/>	skvm-terra	Azure subscription 1	West US

List virtual machines

az vm list

```
OSDisk : {
  "caching": "ReadWrite",
  "createOption": "FromImage",
  "deleteOption": "Delete",
  "diskSizeGB": 30,
  "managedDisk": {
    "id": "/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/skvm-terra/providers/Microsoft.Compute/disks/terra-sk_0sDisk_1_...",
    "resourceGroup": "skvm-terra",
    "storageAccountType": "Premium_LRS"
  },
  "name": "terra-sk_0sDisk_1_c118f6b32cfc40f9b7a319d3c4effeb1",
  "osType": "Linux"
},
"timeCreated": "2025-07-27T12:06:12.733743+00:00",
"type": "Microsoft.Compute/virtualMachines",
"vmId": "608904eb-0a08-4de7-8b7b-a635f816cf0e"
}
]
azureuser@terra-sk:~$ az vm list -o table
Name ResourceGroup Location Zones
-----
terravm MUZZ eastus 3
vmterra MUZZ eastus 3
skvm-terra SKVM-TERRA westus
terra-sk SKVM-TERRA westus
azureuser@terra-sk:~$
```

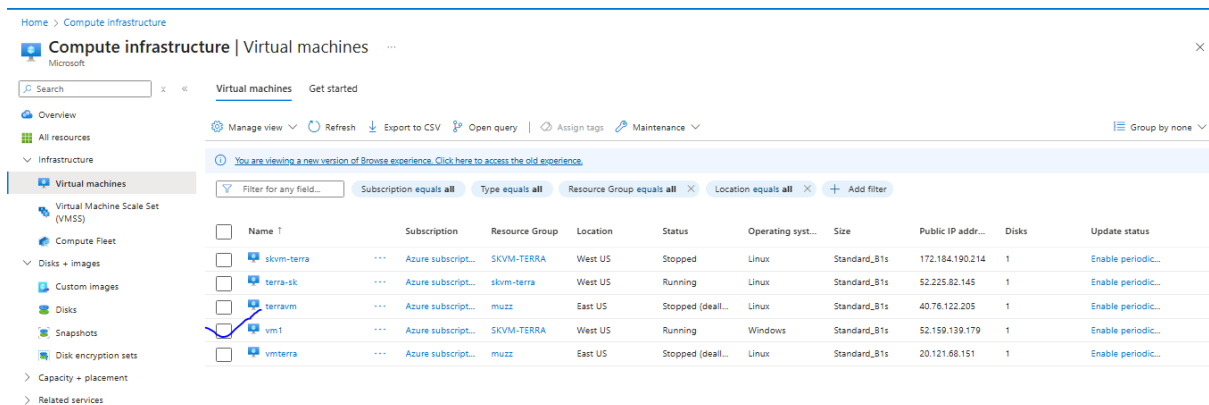
We can start or stop the vm through cli

az vm start -g <rgname> -n <vmname>

az vm show -g <rgname> -n <vmname>

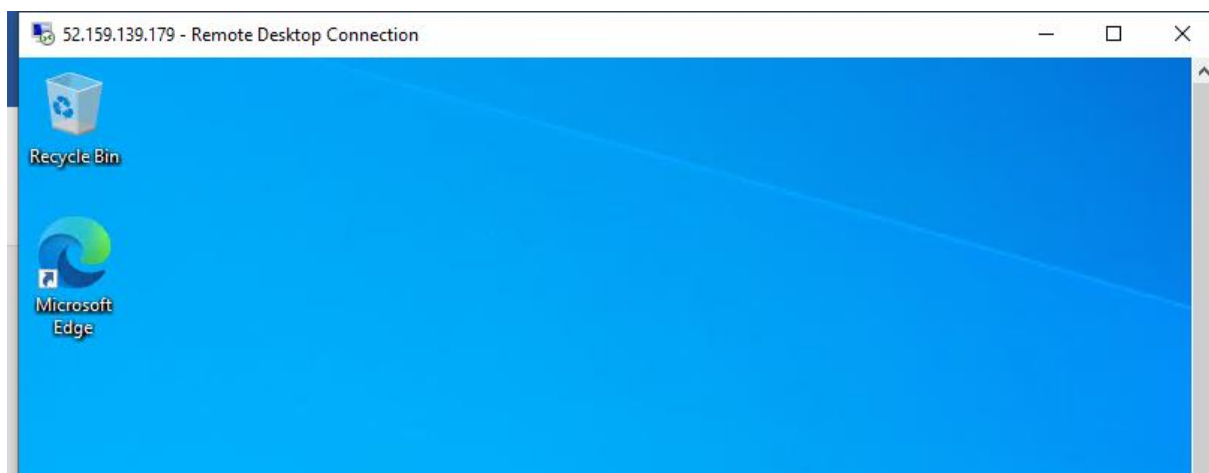
## creating a vm

az vm create -g test -n vm1



Name	Subscription	Resource Group	Location	Status	Operating system	Size	Public IP address	Disks	Update status
skvm-terra	Azure subscrip...	SKVM-TERRA	West US	Stopped	Linux	Standard_B1s	172.184.190.214	1	Enable periodic...
terra-sk	Azure subscrip...	skvm-terra	West US	Running	Linux	Standard_B1s	52.225.82.145	1	Enable periodic...
terravm	Azure subscrip...	muzz	East US	Stopped (deall...	Linux	Standard_B1s	40.76.122.205	1	Enable periodic...
vm1	Azure subscrip...	SKVM-TERRA	West US	Running	Windows	Standard_B1s	52.159.139.179	1	Enable periodic...
vmterra	Azure subscrip...	muzz	East US	Stopped (deall...	Linux	Standard_B1s	20.121.68.151	1	Enable periodic...

We can see a vm is created by using azure cli



## Create azure active directory(AAD) or entra id

Checking Existing Directories

```
az ad signed-in-user show --query 'userPrincipalName'
```

```
az account list --query '[] .tenantId' -o tsv
```

## lets connect azure to terraform

```
az ad sp create-for-rbac --role="Contributor" --scopes="/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404"
```

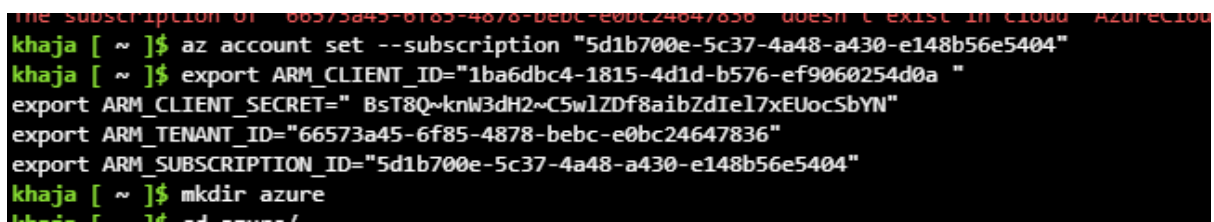
if its get fail we can use export command with required details

```
{
  "appId": " 1ba6dbc4-1815-4d1d-b576-ef9060254d0a ",
  "displayName": "5d1b700e-5c37-4a48-a430-e148b56e5404",
  "password": " BsT8Q~knW3dH2~C5wlZDf8aibZdIel7xEUocSbYN ",
```

```
"tenant": "66573a45-6f85-4878-bebc-e0bc24647836"
}
```

```
subscription_id = "5d1b700e-5c37-4a48-a430-e148b56e5404"
client_id       = "1ba6dbc4-1815-4d1d-b576-ef9060254d0a"
client_secret   = "BsT8Q~knW3dH2~C5w1ZDf8aibZdIel7xEUocSbYN"
tenant_id      = "66573a45-6f85-4878-bebc-e0bc24647836"
```

```
export ARM_CLIENT_ID="1ba6dbc4-1815-4d1d-b576-ef9060254d0a "
export ARM_CLIENT_SECRET="BsT8Q~knW3dH2~C5w1ZDf8aibZdIel7xEUocSbYN"
export ARM_TENANT_ID="66573a45-6f85-4878-bebc-e0bc24647836"
export ARM_SUBSCRIPTION_ID="5d1b700e-5c37-4a48-a430-e148b56e5404"
```



```
khaja [ ~ ]$ az account set --subscription "5d1b700e-5c37-4a48-a430-e148b56e5404"
khaja [ ~ ]$ export ARM_CLIENT_ID="1ba6dbc4-1815-4d1d-b576-ef9060254d0a "
export ARM_CLIENT_SECRET="BsT8Q~knW3dH2~C5w1ZDf8aibZdIel7xEUocSbYN"
export ARM_TENANT_ID="66573a45-6f85-4878-bebc-e0bc24647836"
export ARM_SUBSCRIPTION_ID="5d1b700e-5c37-4a48-a430-e148b56e5404"
khaja [ ~ ]$ mkdir azure
```

Create a directory `mkdir azure`

Create a resource provider file `vi res.tf`

```
terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "4.37.0"
    }
  }
}

provider "azurerm" {
  features {}
}
```

Then we initialized the terraform init

```
export ARM_SUBSCRIPTION_ID="5d1b700e-5c37-4a48-a430-e148b56e5404"
khaja [ ~ ]$ mkdir azure
khaja [ ~ ]$ cd azure/
khaja [ ~/azure ]$ vi res.tf
khaja [ ~/azure ]$ vi res.tf
khaja [ ~/azure ]$ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/azurerm versions matching "4.37.0"...
- Installing hashicorp/azurerm v4.37.0...
- Installed hashicorp/azurerm v4.37.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
khaja [ ~/azure ]$
```

```
Message: The subscription '66573a45-6f85-4878-bebc-e0bc24647836' could not be found.
khaja [ ~/azure ]$ az ad sp create-for-rbac --role="Contributor" --scopes="/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404"
Creating 'Contributor' role assignment under scope '/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404'
The output includes credentials that you must protect. Be sure that you do not include these credentials in your code or check the credentials into your source control. For more information,
see https://aka.ms/azadsp-cli
{
  "appId": "94a1cec8-3d1b-4114-b742-1b400c2f2252",
  "displayName": "azure-cli-2025-07-27-14-59-48",
  "password": "wq18Q~ND04B_ffSA.oivpmrcBbsy63uaTumJb8S",
  "tenant": "66573a45-6f85-4878-bebc-e0bc24647836"
}
khaja [ ~/azure ]$ az account list -o table
Name                        CloudName      SubscriptionId      TenantId                        State      IsDefault
-----
Azure subscription 1 AzureCloud      5d1b700e-5c37-4a48-a430-e148b56e5404  66573a45-6f85-4878-bebc-e0bc24647836  Enabled    True
khaja [ ~/azure ]$ export ARM_CLIENT_SECRET="wq18Q~ND04B_ffSA.oivpmrcBbsy63uaTumJb8S"
khaja [ ~/azure ]$ export ARM_CLIENT_SECRET="wq18Q~ND04B_ffSA.oivpmrcBbsy63uaTumJb8S"
khaja [ ~/azure ]$ export ARM_CLIENT_ID="94a1cec8-3d1b-4114-b742-1b400c2f2252"
khaja [ ~/azure ]$ terraform apply

No changes. Your infrastructure matches the configuration.
```

When we do terraform apply the resources are created

```
khaja [ ~/azure ]$ vi res.tf
khaja [ ~/azure ]$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# azurerm_resource_group.rg will be created
+ resource "azurerm_resource_group" "rg" {
  + id           = (known after apply)
  + location     = "westus"
  + name         = "testtf123"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_resource_group.rg: Creating...
azurerm_resource_group.rg: Still creating... [00m10s elapsed]
azurerm_resource_group.rg: Creation complete after 17s [id=/subscriptions/5d1b700e-5c37-4a48-a430-e148b56e5404/resourceGroups/testtf123]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
khaja [ ~/azure ]$
```

Default Directory (abctest752@gmail.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags

You are viewing a new version of Browse experience. [Click here to access the old experience.](#)

Filter for any field... Subscription equals all Location equals all + Add filter

Name	Subscription	Location
<input type="checkbox"/> muzz	Azure subscription 1	East US
<input type="checkbox"/> NetworkWatcherRG	Azure subscription 1	East US
<input type="checkbox"/> sk-vm	Azure subscription 1	West US
<input type="checkbox"/> skvm-terra	Azure subscription 1	West US
<input checked="" type="checkbox"/> testtf123	Azure subscription 1	West US

Here we can see the resource has been created

If I don't want to give export everytime we can provide in our configuration once

```
subscription_id = "bccafdc0-1217-4202-883e-2c0dbce2e3cb"
```

```
client_id      = "90638e0f-524e-45ea-b751-7f200d04a9c9"
```

```
client_secret  = "35M8Q~sGvaujHKbwi0jDgLxkMvj7VX0PqnSYgabq"
```

```
tenant_id     = "c9947813-2c41-49f2-937e-98e030d55bae"
```

```
}
```

```
Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help

terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "4.37.0"
    }
  }
}

provider "azurerm" {
  features {}
  subscription_id = "5d1b700e-5c37-4a48-a430-e148b56e5404"
  client_id       = "1ba6dbc4-1815-4d1d-b576-ef9060254d0a"
  client_secret   = "BsT8Q~knW3dH2~C5w1ZDf8aibZdIel7xEUocSbYN"
  tenant_id       = "66573a45-6f85-4878-bebc-e0bc24647836"
}

resource azurerm_resource_group rg {
  location = "westus"
  name     = "testtf123"
}
```

Which is not preferable always use environmental variables